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MEMO

SAN FRANCISCO OFFICE
November 10, 2006 Project Number: 100029

To: Valerie Knepper, MTC

From: Bill Hurrell/Elizabeth Cruz

Subject: Summary of Findings, MTC Case Study: Berkeley, Draft 3

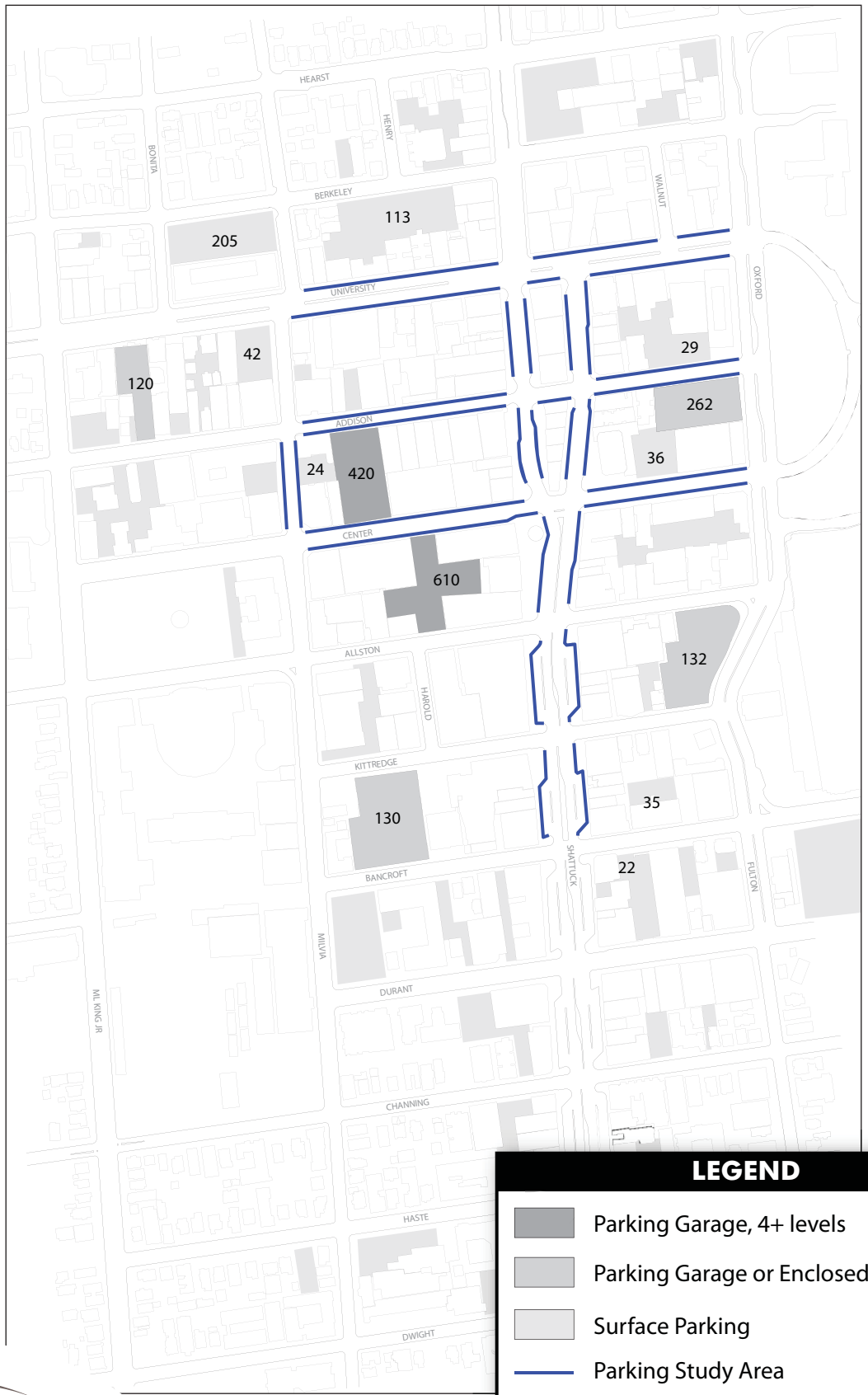
This memorandum presents a summary of findings regarding the City of Berkeley case study for the Metropolitan Transportation Commission's (MTC) Reforming Parking Policies to Support Smart Growth Study. This memorandum includes a description of the existing parking conditions, a summary of current parking trends, preliminary stakeholder viewpoints, relevant Smart Growth related policies and programs, a review of the initial implications from all these sources, and makes preliminary recommendations based on analysis of the parking data obtained. This information provides a basis for potential parking management improvements and policy reforms for the City of Berkeley Downtown Area in support of Smart Growth goals and objectives.

EXISTING CONDITIONS

Existing parking conditions were observed and assessed within Downtown Berkeley to understand current parking trends in the area. These existing conditions were developed through field observations of occupancy, turnover and duration for a typical weekday day during the midday (12:00 PM to 3:00 PM) and evening (4:00 PM to 6:00 PM) periods. A review of previously conducted studies with parking elements was also conducted to supplement the field observations.

On-Street Findings

Parking utilization was observed within a representative ten block area of downtown Berkeley defined by University Avenue to the north, Bancroft Way to the South, Oxford Street to the east, and Milvia Street to the west. The parking study area was selected as it is representative of downtown conditions, defined by the main commercial street (Shattuck Avenue) as well as several typical on- and off-street parking facilities. Note that information collected within the study area was selected as a sample area to be reviewed and confirmed with earlier parking data provided by the City of a Downtown Berkeley Parking Study conducted by Professor Elizabeth Deakin in 2004. Figure 1 presents the location of the parking study area.



Source: IBI Group, WSA May 2006

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Figure 1
DOWNTOWN BERKELEY PARKING STUDY AREA
100029/FIGURES - 09/25/06

Occupancy

Parking occupancy refers to the accumulation of parking or the percentage of parking spaces utilized during a specific period of time. Occupancy is recorded by counting the number of vehicles parked during the specific time period compared to the total inventory of spaces available. From this comparison, an average occupancy rate is defined at that time period. Occupancy rates are typically separated by on-street and off-street parking facilities.

For this study, parking occupancy was observed during the early morning (7:00 AM), midday (12:00 PM to 3:00 PM) and evening (4:00 PM to 6:00 PM) periods on a weekday day to review and compare the data to that obtained and reported in the *Downtown Berkeley Parking Information Study (2004)*[1].

Early Morning

Existing on-street weekday parking conditions in the downtown area were quantitatively assessed during the early morning period (7:00 AM). A total of 305 on-street spaces were observed for parking utilization. Generally, parking during the early morning period was observed to operate well below levels of practical capacity. Practical capacity, usually defined as 85 percent, is the point in demand where users are willing to change behaviors to be able to park in an area and there are available spaces to allow more users to be accommodated (or 15 percent of available parking capacity). Table 1 presents the early morning parking occupancy in the downtown area.

Table 1
Downtown On-Street Parking Occupancy – 7:00 AM

Street	Between	Supply	# Spaces	% Occupied
University Ave.	Milvia/Shattuck	32	9	28%
University Ave.	Shattuck/Oxford	24	12	50%
Addision St.	Milvia/Shattuck	47	30	64%
Addison St.	Shattuck	6	5	83%
Addison St.	Shattuck/Oxford	25	5	20%
Center St.(1)	Milvia/Shattuck	17	5	29%
Center St.	Shattuck/Oxford	24	9	38%
Milvia St.	Addison/ Center	13	9	62%
Shattuck St.(W)(2)	University/Addison	20	10	50%
Shattuck St. (E)(2)	University/Addison	17	2	12%
Shattuck St.(W)(2)	Addison/Center	12	10	83%
Shattuck St.(E) (2)	Addison/Center	7	2	29%
Shattuck St.	Center/Allston	2	0	0%
Shattuck St.	Allston/Kittredge	34	18	53%
Shattuck St.	Kittredge/Bancroft	25	8	32%
	Total	**305**	**134**	**44%**

[1] Data was summarized from a variety of sources and included in 2004 for the *Downtown Berkeley Parking Information Study (2004)*.

Note:

(1) Construction activity was ongoing between the hours of 8:00 AM and 10:00 AM along Center Street between Milvia Street and Shattuck Avenue. As such, the supply of available parking spaces at this location was reduced accounting for the low occupancy levels reported on this block.

Midday

Generally, parking occupancy during the midday period in the study area was generally moderate and observed to range from 82 percent to 86 percent. Table 2 presents the hourly weekday midday parking utilization in the downtown area. It should be noted, however, while overall on-street parking was observed to be near but below practical capacity, occupancy along key segments of downtown streets was observed to operate at or near levels of full capacity.

Table 2
Downtown On-Street Parking Supply 12:00 PM to 3:00 PM

Street	Between	Supply	12:00 PM		1:00 PM		2:00 PM		3:00 PM	
			# Spaces	% Occup.	# Spaces	% Occup.	# Spaces	% Occup.	# Spaces	% Occup.
University Ave.	Milvia/Shattuck	32	27	84%	25	78%	24	75%	28	88%
University Ave.	Shattuck/Oxford	24	20	83%	24	100%	22	92%	21	88%
Addison St.	Milivia/Shattuck	47	32	68%	32	68%	36	77%	33	70%
Addison St.	Shattuck	6	4	67%	4	67%	6	100%	6	100%
Addison St.	Shattuck/Oxford	25	22	88%	22	88%	22	88%	23	92%
Center St.(1)	Miliva/Shattuck	17	15	88%	12	71%	13	76%	14	82%
Center St.	Shattuck/Oxford	24	13	54%	19	79%	17	71%	11	46%
Milvia St.	Addision/ Center	13	13	100%	13	100%	11	85%	13	100%
Shattuck St.(W)	University/ Addison	20	15	75%	18	90%	18	90%	19	95%
Shattuck St. (E)	University/ Addison	17	16	94%	17	100%	17	100%	15	88%
Shattuck St. (W)	Addison/Center	12	11	92%	12	100%	10	83%	11	92%
Shattuck St. (E)	Addison/Center	7	7	100%	7	100%	6	86%	7	100%
Shattuck St.	Center/Allston	2	0	0%	1	50%	1	50%	1	50%
Shattuck St.	Allston/Kittredge	34	32	94%	32	94%	31	91%	33	97%
Shattuck St.	Kittredge/ Bancroft	25	23	92%	21	84%	20	80%	21	84%
	Total	**305**	**250**	**82%**	**263**	**86%**	**250**	**82%**	**256**	**84%**

Note:
(1) Construction activity along Center Street was on-going between the hours of 8:00 AM to 10:00 AM. As such, the supply of available parking spaces at this location was reduced accounting for the low occupancy levels reported on this block.

Evening

During the evening period, parking in the downtown area had an overall higher occupancy when compared to the midday period. Table 2 presents the hourly weekday evening parking utilization in the study area. Parking occupancy for evening period ranged from 88 percent to 96 percent with the peak hour occupancy occurring between at 6:00 PM. Observations for individual blocks revealed that parking on select blocks was fully occupied. Notably, parking occupancies on most blocks along Shattuck Avenue had 100% occupancies. Higher occupancies were also noted along University Avenue, Addison and Milvia Streets. This change in occupancy is partially explained by the presence of restaurants patrons along Shattuck Street who were observed to parking on-street. It should also be noted that meter parking ends at 6:00 PM, which is consistent with 100 percent observed occupancy on the majority of blocks during that time.

Table 2
Downtown On-Street Occupancy 4:00 PM to 6:00 PM

Street	Between	Supply	4:00 PM		5:00 PM		6:00 PM	
			# Spaces	% Occup.	# Spaces	% Occup.	# Spaces	% Occup.
University Ave.	Milvia/Shattuck	32	28	88%	32	100%	31	97%
University Ave.	Shattuck/Oxford	24	21	88%	21	88%	24	100%
Addison St.	Milvia/Shattuck	47	36	77%	37	79%	42	89%
Addison St.	Shattuck	6	6	100%	6	100%	6	100%
Addison St.	Shattuck/Oxford	25	23	92%	23	92%	25	100%
Center St.	Miliva/Shattuck	17	15	88%	16	94%	15	88%
Center St.	Shattuck/Oxford	24	16	67%	21	88%	24	100%
Milvia St.	Addision/ Center	13	13	100%	11	85%	13	100%
Shattuck St.(W)[1]	University/ Addison	20	20	100%	18	90%	19	95%
Shattuck St. (E)[1]	University/ Addison	18	15	83%	16	89%	18	100%
Shattuck St.(W)[1]	Addison/Center	12	11	92%	11	92%	11	92%
Shattuck St.(E)[1]	Addison/Center	7	7	100%	6	86%	7	100%
Shattuck St.	Center/Allston	2	2	100%	1	50%	1	50%
Shattuck St.	Allston/Kittredge	34	34	100%	33	97%	34	100%
Shattuck St.	Kittredge/ Bancroft	25	21	84%	22	88%	22	88%
	Total	**305**	**268**	**88%**	**274**	**89%**	**292**	**96%**

Source: Wilbur Smith Associates, May 2006.

Notes:

(1) Shattuck Street forks and splits in two between Center Street and University Avenue. As such, occupancy for Shattuck is observed along its west and east sides of from University Avenue to Addison and from Addision Street to the Center. Please refer to Figure 1.

Off-Street Parking

Information regarding off-street parking facilities in the vicinity of the parking study area was obtained from several sources. One is the *Berkeley Parking Information Guidance System Final Report* completed in 2004. The report summarizes a number of previous parking reports[2] conducted in the Downtown area. In addition, the review included spreadsheets of off-street parking utilization at Center Street Garage as provided by parking staff for the period of July 2002 to June 2005. Parking occupancy rates were averaged and reported for the weekday morning, midday, and evening periods. Occupancy data on a weekend (Saturday) day was also observed for the morning and evening periods. Table 3 presents the observed occupancy rates by facility name.

Generally, off-street parking facilities within the downtown are most heavily utilized during the weekday AM period and least utilized during the weekday PM period. Parking data is not substantive for the midday period and therefore no definitive trends can be concluded at this time. However, Center Street Garage use data[3] suggests near maximum use of the facility (421 spaces) for some days in 2002 and 2003 (peak hour demand up to 412 spaces). However, use has fallen through 2004 and 2005 with highest use days showing peak hour demand at 340 and generally peak hour use under 300 spaces. Efforts are ongoing to obtain latest city use data for other off-street facilities.

Table 3
Off-Street Parking Occupancy – Weekday

Facility Name	Supply	% Occupied		
		AM	Afternoon[(1)]	Evening
Oxford Lot	132	90%	77 %	75 %
Center Street Garage[4]	420	98%	88%	51%
Berkeley Way Lot	113	29%	81%	71%
University Hall Garage	262	96%	---	27%
UC Banway Lot	45	100%	---	15%
Allston Way Garage	610	73%	84%	37%
Promenade Garage	120	73%	---	---
Baskerville's/Al's Lot	24	129%	129%	21%
Bancroft Lot	61	73%	---	33%
Golden Bear	205	78%	95%	22%

Source: IBI Group, Berkeley Parking Information Guidance System Final Report, April 2005.

[2] Berkeley Repertory Expansion (10/27/97), Berkeley Repertory Educational Programs Analysis (06/02), Aurora Theatre Parking Demand Analysis (2/4/00), Vista College FEIR (11/06/01), Vista College FEIR (4/10/02) (4/11/02), (4/13/02), Vista College DEIR (1/17/98), Library Gardens EIR (6/02, 7/02, 8/02), City of Berkeley Records (2003).

[3] Occupancy Data provided by City of Berkeley Parking Staff for the Center Street Garage for 2002 through 2005.

[4] Occupancy Data compiled from independent study and averaged from multiple sources from 1997 through 2003 (IBI)

Turnover and Duration

Parking turnover refers to the number of vehicles occupying a space throughout an observed time period while duration refers to amount of time a vehicle occupies a space. For the downtown area, duration and turnover were observed along the main commercial street, Shattuck Avenue, from 3:00 PM to 7:00 PM. Typically, parking turnover and duration are computed by observing time for arriving and departing vehicles and recording the license plate number of those vehicles. For on-street parking, license plates are surveyed at regular intervals by foot patrols and each parking space is identified and coded by its license plate number. The observer then codes the vehicles in the space as either "new" (not seen on previous tour) or "repeat" (seen on previous tour). From this field data, accumulation and occupancy are readily computed.

In all, 39 spaces were observed in 60 minute increments and turnover and duration was calculated along Shattuck on blocks between University Avenue and Allston Way. All on- street spaces observed in Downtown Berkeley were exclusively 1-hour metered. Tables 4 and 5 present the turnover and duration of on-street spaces in the downtown study area.

Table 4
Downtown Parking Duration 3:00 PM – 7:00 PM

Street Name	Block Face	Between	Supply	Avg Duration (hours)
Shattuck St. (W)	West	University Ave./Addison St.	1	1.3
Shattuck St. (W)	East	University Ave./Addison St.	8	1.6
Shattuck St. (W)	West	Addison St./Center St.	3	1.2
Shattuck St. (W)	East	Addison St./Center St.	7	1.5
Shattuck St. (E)	West	University Ave./Addison St.	7	2.25
Shattuck St. (E)	East	University Ave./Addison St.	6	1.3
Shattuck St. (E)	West	Addison St./Center St.	7	1.6
Shattuck St. (E)	East	Addison St./Center St.	No Parking	----

Source: Wilbur Smith Associates,

Table 5
Downtown Parking Turnover 3:00 PM – 7:00 PM

Street Name	Block Face	Between	Supply	Turnover		
				3-5 PM	3-7 PM	4-6 PM
Shattuck St. (W)	West	University Ave./Addison St.	1	2.0	2.0	3.0
Shattuck St. (W)	East	University Ave/Addison St.	8	2.0	2.1	2.5
Shattuck St. (W)	West	Addison St./Center St.	3	2.7	2.7	3.3
Shattuck St. (W)	East	Addison St./Center St.	7	2.0	2.3	2.7
Shattuck St. (E)	West	University Ave./Addison St.	7	1.4	1.4	1.7
Shattuck St. (E)	East	University Ave./Addison St.	6	2.0	1.7	2.5
Shattuck St. (E)	West	Addison St./Center St.	7	1.9	2.0	2.4
Shattuck St. (E)	East	Addison St./Center St.	NP	---	---	---

Source: Wilbur Smith Associates, May, 2006

The duration of vehicles parked in on-street spaces along Shattuck Avenue indicate that all observed cars exceeded the permitted time. On average, on-street duration for the 1-hour time limited spaces ranged from 1.3 hours to 2.25 hours. The highest overstay (2.25 hours) was observed on east side of East Shattuck between University Avenue and Addison Street. Possible explanations for extended duration include; broken meters, poor enforcement, and "feeding" the meters. Additionally, this behavior may also be partially explained due to a number of sit-down restaurants located on this block that were observed to be heavily patronized during the late afternoon and into the early evening hours. In addition, it should be noted that meter enforcement ends at 6:00 PM and as such patrons in the area tend to park for extended periods beyond official enforcement times. On-street turnover data reports that for the most part spaces are being occupied by approximately two to three cars over 2 and 4 hour periods between 3:00 PM and 7:00 PM. This data is consistent with the observed overstays.

A 2004 parking study performed by UC Berkeley Professor Betty Deakin and her transportation graduate students in Downtown Berkeley confirm the high on-street occupancy and low turnover also providing the following anecdotal evidence parking "enforcement management":

> "During a pre-dawn visit to the study area, we observed that most spaces were empty, but the broken meters soon filled up as restaurant workers on the early shift arrived by car and parked at them. In addition, we observed that a large part of the meter feeding activity was carried out by retail employees, who knew the routes and schedule that enforcement officers followed and added a small amount of change to their meters (and wiped away tire chalk marks) shortly before the meter vehicle turned the corner."[5]

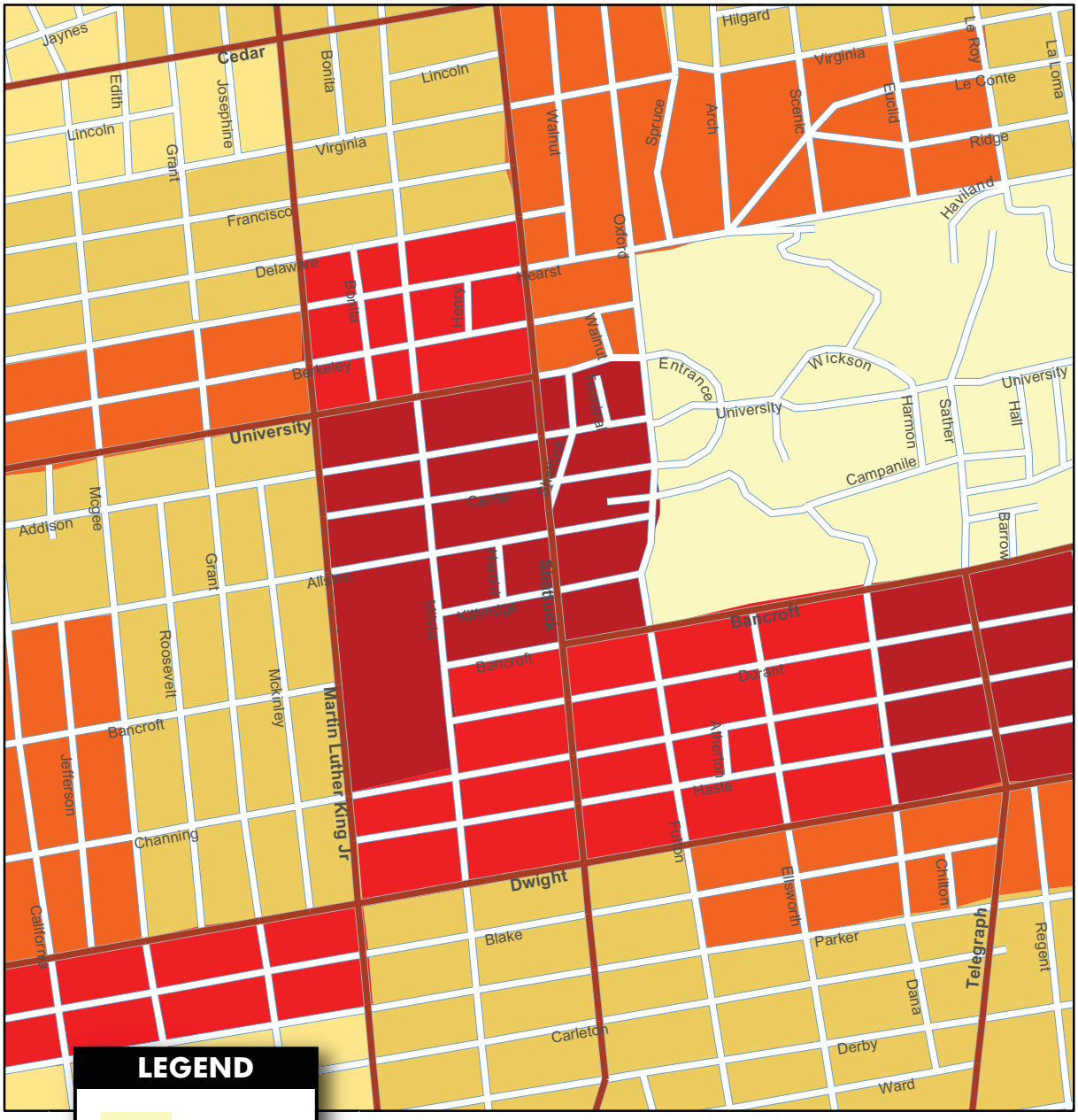
Given this evaluation, there is great potential to implement policies that target meter feeding and time overstay violations such as increased enforcement and graduated pricing.

Mode Split and Car Ownership and Median Income

Journey to Work Data[6] obtained for the study area reveals that approximately 33 percent of people use their autos to reach work. Of these 17 percent, 29 percent drive alone while the remaining 4 percent carpool. The use of public transportation in the study area is about 20 percent, constituted by about 6 percent who use bus and 14 percent who use BART. It is important to note that percentages indicating elevated use of public transit are partly a reflection of the high proportion of students living in the downtown area. Students of the University of California receive a transit pass (Class Pass) as part of their paid tuition which is good for unlimited rides on AC Transit during the school year. As such, a significant amount of transit ridership is accounted for by UC students.

[5] Parking Management and Downtown Land Development:The Case of Downtown Berkeley, CA TRB 2004.
[6] Census 2000, Journey to Work, Census Block 3591.01.

This information is further corroborated by zero-vehicle ownership data which reveals that within the study area there is a high proportion of zero-vehicle automobile households. It should be noted that within the core study area, over 50 percent of households do not own vehicles. Figure 2 indicates the breakdown of zero auto households in the study area



Source: MTC Analysis of 2005 BATS Data

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Figure 2
BERKELEY ZERO AUTO HOUSEHOLDS
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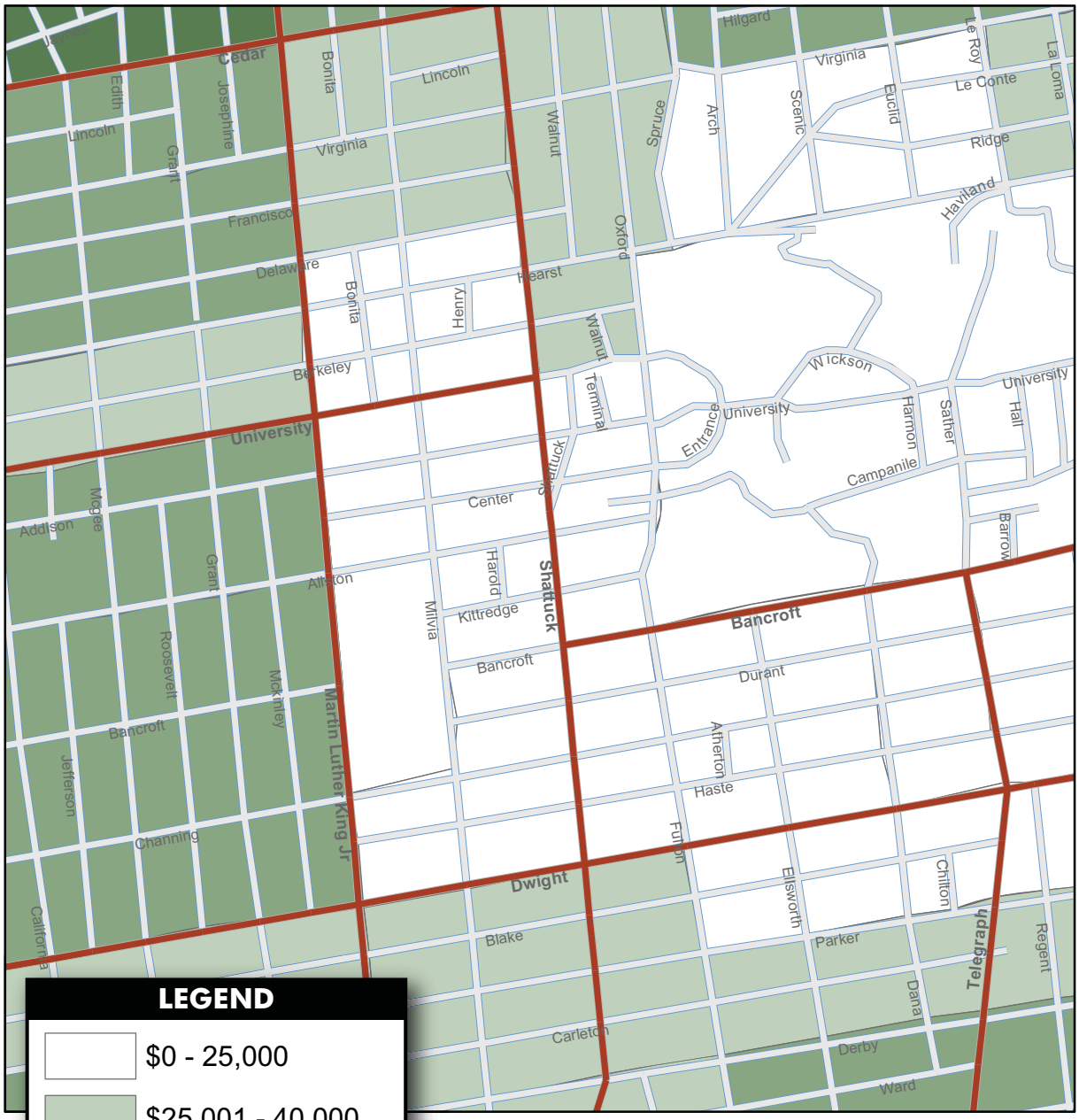
With respect to income, the median household income within the study area was reported at about $17,260 while the median household income for the City of Berkeley as a whole was higher, $44,490. The difference in income levels may be explained by the fact that within the study area there exists higher density development, of which a portion was dedicated to lower-income residents and largely occupied by students attending the University. Figure 3 presents the ranges of household median income within the study area.



Source: 2000 Census

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Figure 3
BERKELEY MEDIAN HOUSEHOLD INCOME
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LAND USE

General Plan

The City of Berkeley's General Plan presents the framework for future city development through an array of supportive policies that articulate the community's priorities and values that will inform and guide the City in making decisions in the coming years. The Plan's goals, objectives, and policies are designed to reinforce the type of desired development that the City has envisioned for itself, as well as to regulate the process that should be followed to achieve those goals. Overall, the land use strategies discussed under the General Plan seek to accomplish a number of objectives, including maintaining and preserving the character of Berkeley, its residential areas, its commercial areas and the Downtown areas. These land use policies also seek to maintain and protect the city's industrial areas, minimize their impacts, and maximize the benefits of the University of California at Berkeley (UC Berkeley) for the citizens of Berkeley.

The General Plan also specifically discusses land use policies with respect to the Downtown areas. The land use policies within the General Plan address development standards for downtown Berkeley, effectively providing guidelines on maximum height limits, and maximum floor area ratios. Additional guidance is given on the type of projects to be fostered in downtown, notably mixed-use including office and residential uses. Land use policies for downtown Berkeley also encourage the increased provision of affordable housing by awarding density bonuses to developers. Policies also focus on reinforcing the pedestrian and transit elements for the downtown areas, and promoting Transit-Oriented-Development (TOD).

The city's high level of transit accessibility and land use regulations that allow for height and density provisions reflect a strong preference toward residential and mixed-use projects. They provide the right environment to foster TOD within its downtown. The development guidelines for mixed-use projects in the downtown allow for a maximum height of 87 feet (7 stories) and floor to area ratios of up to 5:1 with one bonus floor, or 6:1 with two bonus floors. These types of guidelines allow for higher density developments, while significantly increase the viability of expanded transit services. Notable projects within Berkeley's downtown which have come as a result of these generous development guidelines include:

- **The Gaia Building** – seven-story mixed-use building with 91 residential units and 12,000 square feet of commercial space. This building is approximately one block from AC Transit stops and the Downtown Berkeley BART Station
- **The Bachenheimer Building** - 44 residential units and 3,000 square feet of office/retail space.

Upcoming development within the downtown is proposed to include the following projects:

- **Oxford Plaza and David Brower Center** - The proposed project will host housing, retail, office, conference, and restaurant uses. The Oxford Plaza portion of the project will include 96 residential apartment units while the David Brower Center is set to include office space, an auditorium, an art gallery, and meeting rooms. The residential units for this project are proposed to be affordable, occupied by very-low to low income residents
- **Pacific Film Archives (PFA) –** The Pacific Film Archives plans to relocate to a facility currently occupied by a printing plant. The new facility is proposed to be approximately 135,000 square feet and is estimated to show 1,000 screenings throughout the year, with an operating budget of about $11 million.

In light of the proposed development and the existing character of Downtown Berkeley as a transit-supportive environment (served by the Bay Area Rapid Transit (BART), Alameda County (AC) Transit bus system, several bicycle routes, and pedestrians paths), there is significant potential for non-motorized mode trips to and from the downtown areas. Based on survey research conducted in 2002, "over 60% of the downtown workers responding to the survey stated that they commute using non-auto modes. About 30% take transit, 23% walk, and 7% bike. Only 37% of workers stated that they usually reached downtown Berkeley by automobile. A few use different modes from day to day. In addition, of the downtown shoppers who were surveyed, "over half stated that their shopping trip originated from home, while 1/5 each came from work or school. Consistent with these responses, 42% of all shoppers were walking to their shopping destination. 28% took transit to downtown Berkeley, and 20% had driven and parked downtown, with about 2/3 parking on-street."[7]

Based on this information, there exists great potential to influence and change the types of modal trips of Downtown Berkeley workers, shoppers, and visitors. Possible policies and programs that may be implemented to accomplish this will be discussed in later section of this memo.

SMART GROWTH PARKING

Goals

The City of Berkeley's goals that they want to achieve as part of the Smart Growth Parking study consist of the following:

- Develop locally appropriate parking policies and programs to meet General Plan parking goals.

[7] Deakin, Elizabeth. Parking Management and Downtown Land Development: The Case of Downtown Berkeley, CA. 2004. TRB 2004 Annual Meeting.

- A parking management plan and/or policies which take into account development and growth in the downtown area such as UC Berkeley's planned research facility expansion, infill development and redevelopment/rehabilitation of existing public and private parking facilities.
- Parking pricing strategies emphasizing short term parking on-street and long term off-street, and most effective use of supporting new technologies such as pay-and-display on-street meters and electronic wayfinding systems.
- Parking strategies and policies to encourage alternative modes of transportation, balance parking demands associated with retail and commercial sites, and maximize use of off-street facilities.
- Recommendations to refine downtown parking codes and potentially expand requirements to other areas of the city

Existing Relevant Policies

Berkeley's existing relevant policies will be discussed and analyzed as to how they contribute to or hinder the City from furthering those goals. The City of Berkeley's existing and proposed policies from the General Plan and the UC Berkeley *2020 Long Range Development Plan* were evaluated for the provision of the following Smart Growth benefits and noted here:

- Density
- Connectivity/Walkability/Livability
- Transit/Mode Choice
- Convenience/Ease of Use
- Progressive Financing/Pricing
- Overall/Overarching Benefits

General Plan

Land Use

Policy LU-3 Infill Development

Encourage infill development that is architecturally and environmentally sensitive, embodies principles of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale. (Also see Urban Design and Preservation Policies UD-16 through UD-24.)

Smart Growth Benefit: Density

Policy LU-17 Downtown Development Standards

Maintain the physical character of the Downtown.

Actions (as outlined in the *Berkeley General Plan*)**:**

A. Maintain Downtown Plan maximum height limits, maximum number of stories, and maximum floor area ratios for new construction.

B. Amend the Downtown Plan and Zoning Ordinance to eliminate the density bonuses given for retail space and amend the Zoning Ordinance to require ground-floor retail uses in mixed-use buildings where deemed appropriate.
C. Consider amending the Zoning Ordinance to establish a four-story minimum building height in the Core area and two or three stories in the other subareas of the Downtown.
D. Encourage mixed-use projects that include both office space and housing above appropriate ground- floor uses (retail or arts) to improve the balance between the number of jobs and the number of housing units in the Downtown.
E. Convene a Planning Commission task force to evaluate the need for and appropriateness of a new downtown hotel and conference center /ecological demonstration/mixed use project, taking into consideration:
    1. Market demographics
    2. Traffic and transit conditions
    3. Hiring and employment policies
    4. Public amenities and community accessibility
    5. Urban design
    6. Green building principles
    7. Daylighting Strawberry Creek
    8. Special development standards and mitigations.

Smart Growth Benefit: **Density, Connectivity/Walkability/Livability**

Policy LU-18 Downtown Affordable Housing Incentives

Maximize the supply of affordable housing in the Downtown.
Action: A. Amend the Downtown Plan and Zoning Ordinance to provide incentives for affordable housing development in the Downtown Plan area. Up to one additional floor above the Downtown Plan base height limit may be provided for projects that meet the Government Code 65915 et seq. (State Density Bonus law) thresholds for a density bonus, and up to two additional floors may be provided for residential projects that significantly exceed the State Density Bonus law affordability standards. (Specific standards, incentive priorities, and thresholds shall be developed in the Zoning Ordinance Amendment.)

Policy LU-20 Downtown Pedestrian and Transit Orientation
Reinforce the pedestrian orientation of the Downtown.
Actions:
A. Continue to explore options for the partial or complete closure of Center Street, Addison Street or Allston Way to automobiles to promote the pedestrian and commercial vitality and enhance Civic Center Park use and appearance. When exploring options, carefully consider the experiences of other cities where closures have proven to be successful and where closures have proven to be unsuccessful or detrimental.
B. Implement capital improvement projects that reinforce the pedestrian, transit, commercial, arts, and entertainment orientation of the Downtown and improve the quality of life for visitors and residents of the area.

C. Reconstruct the Downtown BART Station and Plaza to be more pedestrian-friendly and visually attractive.
D. Encourage development of public spaces, plazas, and restoration of natural areas in the Downtown and other areas of the city where appropriate to enhance the pedestrian environment.

Smart Growth Benefit: **Walkability/Connectivity/Livability**

Policy LU- 23 Transit-Oriented Development

Encourage and maintain zoning that allows greater commercial and residential density and reduced residential parking requirements in areas with above-average transit service such as Downtown Berkeley. (Also see Transportation Policy T-16.)

Actions:

A. Consider revisions to the Zoning Ordinance to establish a minimum height limit of two, and where feasible three stories, and to require or encourage residential development above the ground floor on transit corridors.
B. Consider amending the Zoning Ordinance to establish a four-story minimum building height in the core area and two or three stories in the other subareas of the Downtown.

Smart Growth Benefit: Density

Policy LU-24 Car Free Housing in the Downtown

Encourage development of transit-oriented, low-cost housing in the Downtown. (Also see Transportation Policy T-16.)

Actions:

A. Consider reducing or eliminating the on-site parking requirements for new Downtown housing units.
B. Designate the City's Oxford parking lot as the site for a pilot mixed-use development that would waive the Downtown Plan parking requirements for housing on the site.
C. If parking requirements are reduced, require developers to facilitate the mobility of residents through means such as providing residents with free or discounted transit passes, providing access to car-sharing, and providing bicycle storage facilities.
D. If parking requirements are reduced, require lease provisions that prohibit car ownership; and prohibit residents from buying RPP permits.
E. Study the relationship between car-free housing and quantitative reduction in automobile use by residents, and study the effectiveness of various restrictions on car ownership by residents of car-free housing.

Smart Growth Benefit: **Transit/Mode Choice**

Policy LU-27 Avenue Commercial Areas

Maintain and improve Avenue Commercial areas, such as University, San Pablo, Telegraph, and South Shattuck, as pedestrian-friendly, visually attractive areas of pedestrian scale and ensure that Avenue areas fully serve neighborhood needs as well as a broader spectrum of needs. (See Land Use Diagram for locations of Avenue Commercial areas. Also see Economic Development and Employment Policy ED-4 and Urban Design and Preservation Policy UD-28.)

Actions:

A. Require ground-floor commercial uses to be oriented to the street and sidewalks to encourage a vital and appealing pedestrian experience.
B. Ensure safe, well-lighted, wide walkways that are appropriately shaded for compatibility with upper-story residential units and adequate traffic signals for pedestrian street-crossings in commercial areas.
C. Provide street trees, bus shelters, and benches for pedestrians in commercial areas.
D. Provide bicycle facilities and ample and secure bicycle parking wherever appropriate and feasible.
E. Maintain and encourage a wide range of community and commercial services, including basic goods and services.
F. Encourage sensitive infill development of vacant or underutilized property that is compatible with existing development patterns.
G. Regulate the design and operation of commercial establishments to assure their compatibility with adjacent residential areas.
H. Maintain and improve the historic character of Avenue Commercial areas with design review and careful land use decisions.

Smart Growth Benefits: Connectivity/Walkability, Livabililty, Transit/Mode Choice

Circulation

Policy T-4 Transit-First Policy

Give priority to alternative transportation and transit over single-occupant vehicles on Transit Routes identified on the Transit Network map (Figure 7, page T-31).

Action: A. In residential areas, restrict fixed-route transit services to Primary and Secondary Transit Routes shown on the Transit Network map.

Smart Growth Benefit: Transit/Mode Choice

Policy T-10 Trip Reduction

To reduce automobile traffic and congestion and increase transit use and alternative modes in Berkeley, support, and when appropriate require, programs to encourage Berkeley citizens and commuters to reduce automobile trips, such as:

1. Participation in a citywide Eco-Pass Program (also see Transportation Policy T-3).
2. Participation in the Commuter Check Program.
3. Carpooling and provision of carpool parking and other necessary facilities.
4. Telecommuting programs.
5. "Free bicycle" programs and electric bicycle programs.
6. "Car-sharing" programs.
7. Use of pedal-cab, bicycle delivery services, and other delivery services.
8. Programs to encourage neighborhood-level initiatives to reduce traffic by encouraging residents to combine trips, carpool, telecommute, reduce the number of cars owned, shop locally, and use alternative modes.
9. Programs to reward Berkeley citizens and neighborhoods that can document reduced car use.

10. Limitations on the supply of long-term commuter parking and elimination of subsidies for commuter parking.
11. No-fare shopper shuttles connecting all shopping districts throughout the City.

Smart Growth Benefits: Transit/Mode Choice

Policy T-11 City of Berkeley

Establish the City of Berkeley as a "Model Employer" in the area of trip and emission reduction.

Actions:

In addition to establishing a Berkeley Eco-Pass program (see Transportation Policy T-3):

A. Eliminate free or low-cost parking provisions from employee individual and union contracts.
B. Establish employee automobile use reduction goals. To meet these goals, consider: in addition to Eco- Pass, expanding the fleet bicycle program, providing a vacation day bonus for bicycle or transit use, and establishing flex hours and telecommuting programs.
C. Publicize the Guaranteed Ride Home Program for carpoolers and parents who use alternative transportation.
D. Locate City worksites near major public transportation facilities to the extent feasible.
E. Provide express shuttle service during peak hours between transit hubs and outlying worksites.
F. Purchase only energy efficient gasoline powered, "hybrid," and biodiesel and other alternative-fuel City vehicles.
G. Encourage development of compressed natural gas and other alternative-fuel stations.
H. Use market pricing mechanisms to discourage all-day parking in City garages.
I. Add transit information and information about Eco-Pass (once established) and Commuter Check to all business license application related mailings.
J. Provide secure bicycle parking at all major City worksites.

Smart Growth Benefits: Transit/Mode Choice

Policy T-31 Residential Parking

Regulate use of on-street parking in residential areas to minimize parking impacts on neighborhoods. (Also see Land Use Element Policy LU-10.)

Actions:

A. Improve enforcement of the Residential Preferential Parking Program.
B. Restrict Residential Parking Permits to residents of the district and further limit the number of guest passes that can be issued to a single address.
C. Correct abuses of 14-day and 1-day Residential Preferential Parking visitor permits.
D. Do not issue parking permits to residents of new car-free housing developments or to residents of projects which have been granted variances to reduce required off-street parking.
E. Discourage use of on-street parking for long-term storage of cars.
F. Enforce regulations against parking on lawns and sidewalks.
G. Ensure provision of adequate off-street parking for new projects in low-density residential areas.

H. Add information on transit alternatives on parking tickets.
I. Allow the expansion of RPP areas if it is found that additional residential streets are being used for employee and other commercial parking or vehicle storage.
J. Revise the RPP program to further restrict the number of permits issued to institutional users and set clear standards for issuance of RPP permits to institutions that include requirements for on-site transportation demand management programs and transportation alternatives.

Smart Growth Benefits: **Livability, Overall**

Policy T-32 Shared Parking

Encourage Berkeley businesses and institutions to establish shared parking agreements, which would make the most efficient use of existing and new parking areas. (Also see Economic Development and Employment Policy ED-6.)

Smart Growth Benefits: **Livability, Mode Choice**

Policy T-34 Downtown and Southside Parking Management

Manage the supply of Downtown and Southside public parking to discourage long-term all-day parking and increase the availability and visibility of short-term parking for local businesses. (Also see Economic Development and Employment Policy ED-6.)

Actions:

A. Offer reduced rate or free parking for carpools and van pools at City garages and selected street locations.
B. Improve signage and access to existing public parking, including UC lots open to the public, in the Downtown and in the Southside.
C. Increase all-day parking rates, maintain lower parking rates for short-term parking, eliminate monthly parking passes, provide "cash-out" programs, and extend hours of operation in City garages
D. Improve lighting and security in Downtown garages to encourage better utilization during off-peak hours.
E. Require all City employees and officials to pay the fair market rate for parking.
F. Limit employee parking based on need for a vehicle on the job, number of passengers carried, disability, and/or lack of alternative public transportation.
G. Identify locations to increase short-term, on-street parking capacity through restriping and angled parking in commercial areas.
H. Enforce existing short-term parking laws in commercial districts (i.e., meter parking) to alleviate abuse.
I. Provide information on transit alternatives, commuter checks, and obtaining transit passes at City parking garages and on City parking tickets. Give this information to everyone who applies for a long-term parking permit in any City-owned parking lot or garage.
J. Encourage visitors attending sporting events, entertainment events, theatrical performances and special events in the Downtown and Southside areas to use transit so that some existing parking remains available for other visitors.

K. Increase the availability of short-term parking by encouraging better utilization of existing parking as recommended by the Southside/Downtown Transportation Demand Management Study, including making parking that is currently not available to the public, available for short-term parkers.
L. Work with the business and arts community and owners of existing parking lots and garages, including the University, to cooperatively manage parking demand and parking resources, coordinate parking policies, parking rates and parking information programs, and widely disseminate parking maps and parking information.

Smart Growth Benefit: Livability, Mode Choice, Convenience

T-35 Public Parking Supply in the Downtown and Southside

Prioritize implementation of improved parking conditions in the Downtown and Southside through better utilization of existing parking and through implementation of policies to reduce demand for parking. Allow enough time for these improvements to be in place to demonstrate their effectiveness before considering public expenditures on construction of additional City-owned public parking spaces in the area.

Actions:

A. Reduce demand for parking by implementing specific actions in the Southside/Downtown Transportation Demand Management Study (see Tier One, Tier Two, and Tier Three programs and actions in the TDM Study) particularly taking actions to improve transit services and implementing an Eco-Pass program (see Policy T-3), and implementing commuter, shopper, and visitor shuttles (see Policy T-2).
B. Increase availability of existing parking, including UC parking, to shoppers, visitors, and other short-term users (see also Policy T-34).
C. Establish baseline parking supply and utilization data and monitor parking conditions on an ongoing basis in all City and UC parking lots and garages available to commuters, shoppers and other visitors to determine effectiveness of implementation of Actions A and B.
D. Conduct a visitor access survey to improve understanding of visitor use of and demand for parking (including bicycle parking) and transit at different times and locations in the Downtown and Southside and to help inform implementation of Actions A and B. If visitor access survey indicates substantial visitor/customer demand for short-term parking, determine how the City's parking policies and administration can be strengthened to discourage all-day commuter parking and make more visitor/customer parking available.
E. Create a prioritized implementation plan for Actions A and B, including a schedule, so that the community can track the progress of implementation.
F. Working cooperatively with the Downtown Berkeley Association and other stakeholders, develop approaches (incentives and disincentives) that would discourage employees from parking at meters, preventing those spaces from being used by short-term visitors and customers.
G. If it is determined in the future that additional parking is needed in the Downtown area, the Center Street garage will be considered an appropriate location for expansion. Parking expansion shall be prohibited at the Civic Center Park.

Smart Growth Benefit: Overall

Policy T-36 Satellite Parking Facilities
Explore opportunities to move existing long-term parking supply out of the Downtown, University and Southside areas by creating satellite parking lots with express shuttle service to the Downtown and Southside areas.
Smart Growth Benefit: **Mode Choice**

Policy T-41 Structured Parking
Encourage consolidation of surface parking lots into structured parking facilities and redevelopment of surface lots with residential or commercial development where allowed by zoning.
Actions:
A. Strategically locate structures to serve commercial and employment centers through the use of express shuttle and trolley service.
B. Encourage housing above parking in transit-oriented locations.
C. Provide parking and recharging facilities for alternative vehicles such as bicycles and electric and low-emission vehicles.
D. Whenever feasible, orient automobile access to parking lots and garages away from designated bicycle ways and boulevards and avoid blank walls along pedestrian ways.
Smart Growth Benefit: **Convenience**

Berkeley Downtown Plan (1990)

Historic Preservation and Urban Design Element

Objective 1: Provide continuity between the old and the new in the built environment. Retain the scale and the unique character of the downtown.

Policy DT-1
Retain the older, historically valuable buildings in the and around the downtown. Encourage adaptive re-use of older buildings by promoting rehabilitation and reuse of existing structures that contribute to the overall design character of downtown.

Objective 2: Strengthen the downtown's identity, image and sense of place.

Policy DT-7
Recognize that different parts of the downtown have special character, and develop programs to strengthen and reinforce it. Develop land use, density, special design features, and building guidelines.

Objective 4: Enhance and improve the physical connection between downtown and the surrounding neighborhoods and institutions, such as the University of California.

Policy DT-15

Adopt development guidelines that promote linkages and better connections between the downtown and the University; and between the downtown and the neighborhood shopping districts.

Policy DT-17
Development along the Oxford edge should incorporate open spaces to provide a transition between the Oxford edge and the more dense areas of the downtown. Maintain visual openness along Oxford Street.

Policy DT-18
Activity and new development in the civic center should be oriented toward the Civic Center Park and away from the residential neighborhood. Expansions or additions to buildings should keep within the character of the Civic Center and maintain the existing setback of old city hall. The height should not exceed the old city hall roofline.

Benefits: Walkability/Livability/Connectivity

Transportation and Circulation

Objective 1: Encourage the use of transit as the primary mode of travel.

Policy DT-52
Increase transit access to and from the downtown in response to commute patterns.

Policy DT-53
Develop shuttle transit service to supplement AC Transit service to the downtown from residential neighborhoods and satellite and peripheral parking facilities.

Objective 3: Create adequate parking facilities to support land use policies for the downtown

Policy DT-59
Increase the availability of short term parking spaces on the periphery of the core downtown area.

Policy DT-60
Discourage the use of existing public and private parking facilities for long term parkers in the high demand area of the downtown core.

Benefits: Transit/Mode Choice

Land Use

Objective 1: Strengthen downtown as a vital city center offering employment, housing, recreational and cultural opportunities for Berkeley residents. Consider retail uses and residential uses as the highest priorities for the downtown as a first priority, with residential uses second priority.

Policy DT-80
Strengthen the downtown's highly diversified land use mix and maintain the historic land use pattern of ground floor retail, commercial, and restaurant uses, with residential and office uses above.

Policy DT-81
Encourage land uses that will draw Berkeley residents to downtown for shopping and other activities. Attract a major retail anchor (department store or shopping complex) to strengthen the retail sector and create a unique and successful downtown shopping environment.

Policy DT-82
Encourage intensive retail and entertainment uses to locate downtown. Ensure that zoning regulations for the, neighborhood commercial districts are more restrictive regarding regional uses (excluding South Berkeley) to encourage such businesses to locate in the downtown.

Policy DT-84
Encourage residential development in and near downtown for a variety of social and income groups. Strongly encourage mixed use developments that include retail, residential, and office uses. Preserve, upgrade and develop low and moderate income downtown housing.

Policy DT-85
Offer development incentives (tax benefits, density bonuses) to encourage appropriate downtown development. Encourage changes in use to promote land uses more compatible with the establishment of a vital, pedestrian-oriented commercial center. Encourage auto repair shops, large printing facilities, surface parking lots, gas stations, auto sales and other industrial-oriented business to relocate to other parts of town.

Objective 2: Focus development and new land uses in the center of downtown near transit facilities; minimize the impacts of development on adjacent neighborhoods by creating transitional buffer zones around the core

Policy DT-86
Cluster intense development activity in the central core area of the downtown, and locate transitional uses and moderately scaled buildings in buffer zones along the edge.

Policy DT-87
Protect neighborhoods from adverse traffic impacts and parking spillover.

Policy DT-90 Sub Area Policies:

Core Area

- Focus development activity in the core area by permitting buildings to be taller and denser than buildings in the buffer areas. Permit new construction up to 7 stories in specific locations in the core, and utilizing specific bonus provisions outlined on page.

- Encourage the provision of off-site parking; discourage core development from providing on-site parking. Eliminate surface parking lots.
- Permit demolition of small historically non-significant buildings in the core area if necessary to construct new buildings for a preferred use in the Downtown Plan. Discourage demolition of structures identified in the BAHA Historic Survey and designated through a public process as Landmarks, Significant Structures or Contributing Structures.
- Encourage the development of small parcels within the core, as opposed to their assembly into larger parcels.
- Create a pedestrian-oriented zone, by requiring retail or public uses at the ground floor of buildings.

Civic Center/West Buffer Area

- Encourage cultural and community services to locate in the Veterans' Building.
- Develop a design plan for Center Street to connect the Civic Center with BART and the Campus. (See Environmental Quality Element) Implement the Civic Center Urban Design Plan.
- Find a location for a Youth Center in the Civic Center area. (See Social/Cultural Element)
- Maintain Civic Center Park as an open space.
- Develop a parking facility in the area to prevent spillover into the adjacent neighborhood.

Benefits: Density, Livability, Transit/Mode Choice, Overall

UC Berkeley 2020 Long Range Development Plan

Given land constraints and the need to optimize the use of finite campus resources, the UC Berkeley 2020 Long Range Plan designates space utilization through Location Guidelines that help guide development along the defined areas of the Plan. The guidelines include the following:

Guideline G.2 City Interface
Campus edges and entrances should create a positive first image of both the campus itself and its synergy with the city around it. New buildings at the city interface should be sited and designed to accommodate a more coherent and unifying landscape treatment.

Guideline G.3 Build-To Lines
While some variation is desirable to allow for entrances and façade articulation, at least 75 % of the façade should lie on the build-to line.

Guideline G.5 Active Frontages
City Interface – In the city General Plan, several sections of blocks adjacent to campus are distinguished as a place by design treatment – paving, lighting, furnishing – and must provide direct access for persons with special mobility needs.

Guideline G.8 Height

City Interface – Buildings at the campus edge should be designed to create a graceful transition in scale from campus to city. Along the Oxford frontage, buildings should be no greater than 95' in height within 200' of the curbline. On sloping sites, parts of the building may be greater than 95' but not over 110' in height, but the average height within the 200' wide zone should be no greater than 95'.

Program Guidelines

Campus buildings endure far longer than their initial contents, and should be designed to maximize their flexibility. A few basic conventions should be followed in the design of all new buildings to ensure these major investments have a long and productive life.

Guideline G.14 Ground Floor Spaces

Guideline G.5 prescribes specific programming for buildings facing Places of Interaction and the City Interface. However, the program of every new building on campus should seek to optimize its contribution to the quality of campus life. The ground level spaces of each building should be served for its most public functions, and those spaces facing public aras should be as transparent as the program allows. Main entry lobbies should be designed as inviting places for waiting and engagement, which features commensurate with the scale and functions of the building.

Oxford Frontage:

The majority of the Oxford frontage is comprised of green open space: the Crescent, the Creek, and the proposed Edwards Green. In order to create a more coherent landscape treatment in the picturesque style along this frontage, new buildings along Oxford should be setback a minimum of 60' from the curbline.

Benefits: Density, Connectivity, Livability, Transit/Mode Choice, Overall

Berkeley Zoning Code

Chapter 23E. 68 C-2 CENTRAL COMMERCIAL DISTRICT PROVISIONS

Section 23E.68.080 Parking – Number of Spaces

C. The district minimum standard parking requirement for commercial floor area *is one and one half spaces per each 1,000 square feet of gross floor area of applicable non-residential area*[8]. Uses listed in Table 23.E.68.080 shall meet the requirements listed or the district minimum, whichever is more restrictive, for newly constructed floor area changes of uses, and the provisions below.

[8] Note: Italics added for emphasis.

Table 23E.68.080 **Parking Required**	
Use	**Requirement**
Dwelling of One to Four Units	One per dwelling unit
Group Living Accommodations	One per four residents
Hotels, Tourist (including Inns, Beds and Breakfasts and Hostels)	One per three rooms and one per three employees
Multi-Family Dwelling, five or more	One per three dwelling units
Single Room Occupancy (SRO) Residential Hotels, with only common facilities	One per eight residents
Single Room Occupancy (SRO) Residential Hotels, with some facilities	One per four residents

Source: City of Berkeley, Zoning Code.

IMPLICATIONS FOR SMART GROWTH

The City of Berkeley has several smart growth policies developed as part of the Downtown Plan as well as those articulated in the General Plan. The major strategies are focused on elements to enhance economic vitality, promote downtown as a vibrant center of the city, and manage parking to compliment the needs of downtown parking patrons. Given these objectives, it becomes imperative that supportive policies to reinforce the desired character for the downtown be explored.

A review of current parking utilization data reveals that the on-street parking supply in the downtown is highly utilized during the weekday midday and evening periods. Parking turnover and duration rates further indicate that a significant portion of motorists generally do not observe the established one-hour time limits, in light with findings of a recent study of downtown parking patterns (Deakin et. Al) who estimate perhaps 700 daily meter feeders downtown. Additionally, parking occupancy rates show that a large percentage of blocks within the downtown are fully utilized during the entire day. This data indicates that there is potential to revise the existing parking policies to foster better parking utilization and enhance the economic viability of the downtown.

Business owners in the downtown areas generally view parking as a crucial element to keep them in business; similarly, visitors driving to downtown Berkeley want to be assured that they would have a parking space upon arriving in the area. While no new survey data has been collected regarding on-street parking within the downtown, the case

study did review information on off-street parking within the downtown, and city Center garage use data through the first half of 2006. It appears currently there is off-street capacity at Center capable of absorbing some of the long term parkers on-street. It is important that policy decisions regarding on-street parking be developed in concert with off-street parking as the two are inherently related and affect the use of each other.

The City of Berkeley laid much of the necessary foundation to promote Smart Growth through several policies and programs established in its General Plan, Downtown Plan, and Zoning Code. The City has also worked closely with UC Berkeley to ensure that new developments and their impacts are carefully considered with respect to their surrounding context. Receptivity and acceptance of any proposed policies will invariable differ among different members of the community. As the community seeks to be involved in the changes that most affect them, it is only natural that they voice their concerns. The following section presents the findings of interviews conducted with key Downtown Berkeley Stakeholders.

STAKEHOLDER PERCEPTIONS

Stakeholder perceptions are important to the feasibility and acceptability of new and revised parking strategies. Consequently, a part of the case study is to assess stakeholder perceptions on parking issues and potential recommendations. To date, interviews have been conducted with:

- Downtown business interests via the Downtown Berkeley Association
- City Planning & Development Department and Public Works Department, Transportation Division
- Residents, development and other community interests via Downtown Area Plan Advisory Committee
- Parking enforcement, management and meter technology via city and vendor personnel

Interactions with these and other concerned parties are planned for the next Transportation Commission meeting. The following important perceptions were identified:

- **Support for Revised On-Street Parking Rates If …:** The revision of on-street parking rates to encourage a shift to off-street facilities is generally acceptable among stakeholders, with some preference for "progressive" rates (i.e. increasing) with parking duration, (e.g. Pacific Grove, Redwood City, NY, U.K., Europe) as well as higher rates generally by prime location in downtown. Support for such strategies also require a clear commitment to the development of beneficial programs and measurable benefits such as:
    - off-street parking development,
    - alternative/commute travel options for downtown employees,
    - designated parking revenue expenditures,

  - improved on-street enforcement,
  - parking wayfinding,
  - neighborhood spillover safeguards and
  - monitoring of price change impacts.

- **Need for Clarity and Commitment on Parking Supply Future Downtown:** Downtown business interests in particular perceive progressive pricing as desirable to free up on-street spaces from overtime parkers and meter feeders to making room for shoppers and customers. However there are concerns focusing the ability of the ever-changing downtown to absorb the shift in parking demand. The downtown business interests point to several examples that leave the Berkeley parking picture unclear:
  - Several plans for downtown development, but unclear plans for parking replacement
  - In-lieu fees collected with no plans for expenditure (Vista College relocation)
  - Uncertain plans for Center Street garage retrofit/replacement
  - Perceptions of parking plans that never came to fruition (Berkeley Way and Oxford)

- **New, Specific Travel Options for Downtown Employees:** For pricing revisions to be acceptable, stakeholders favor packaging them with TDM options for downtown employees. The recent Berkeley TDM Study (Southside/Downtown TDM Study, Nelson/Nygaard Associates, March 2001) plan has the perception of low implementation feasibility due to its daunting number of recommendations, lack of sufficient priorities or attention to implement feasibility. Suggested incentives to use alternative modes of transit included:
  - Discounted transit passes
  - Berkeley Trip, a downtown retail space which provided storefront service for passes, information, and rideshare matching, was noted by many who missed the customer friendly experience.

- **Sharing of New Parking Revenue Increments Enhances Pricing Acceptance:** Commercial interests in downtown perceive possible dedication of increased parking revenues to on-street and downtown area improvements including but not limited to:
  - Specific sidewalk maintenance,
  - Lighting improvements,
  - Cleaning
  - Security services.

  These improvements are especially of interest to not only commercial but residential interests voicing them at a recent meeting of the Downtown Area Plan.

- **Vigilant Enforcement Needed For Revised Pricing:**
  - Primarily concerned that any change in on-street pricing be accompanied by vigilant enforcement to prevent meter feeding (less likely but still possible under escalating meter rates) and overstay violations.

  - Perceptions were mixed on the effect of removing time limits under a progressive on-street pricing scheme, essentially allowing the price alone to be the restraint on long term parking.
    - Some felt it would enable more efficient enforcement
    - Others believed meter feeding might become rampant as employees try to feed meters repeatedly at lower first hour rates.
  - Regarding meter programming for progressive rates,
    - According to the meter vendor, Pay-display meters on Shattuck can be reprogrammed easily and remotely, though signs and rate information would need to be updated
    - Adding a key pad and requiring parkers to enter a part of their license number to prevent feeding would be cumbersome and could inconvenience customers, according to the vendor. Similarly "sonar" meters sensing vehicle turnover to discourage feeding are still in test stages.

- **Improved Signs And Center Garage Redesign Seen as Important to Better Off-Street Use:** Most stakeholders indicate signs for parking are lacking and support:
  - Improved signing of rates and hours of operation and – if possible –
  - Real-time availability of space.

  There is some awareness of a new planned "wayfare" program involving private, City and University garages and pointing drivers to parking facilities. However, there is uncertainty if the signs will indicate spaces available in real time. Another important perception is the difficult circulation within and around the Center Street garage to find parking, and the unpleasant if not unsafe experience of using the facility.

- **Neighborhood RPP Changes Will Enhance Acceptance of Parking Pricing Revision**: While city staff report a low level of complaints from residents in RPP zones, neighborhood representatives at a recent Downtown Area Plan meeting expressed concern about possible spillover from revised on-street rates. Also, downtown business representatives expressed desire for more than one per business parking permit ($100/yr) per business for parking on street. Attention to an acceptable revision in RPP closest to downtown will aid the feasibility of revising core area on-street pricing, possibly involving restricted neighborhood block faces priced to non-residents with revenues again devoted to local improvements.

- **Monitoring the Effect of On-Street Pricing Changes is Important:** Commercial and city staff interests perceived the need to monitor the effects of any price changes on-street. Effects to track include use of off street facilities, meter feeding and overstays, neighborhood spillover and mode switch (transit, rideshare, walk, bike). Interviews with start up company vendors indicate new technologies exist to facilitate continuous monitoring of demand and turnover and underscore tests at BART and Port of San Francisco.

- **Parking Zoning Requirements Perceived as Acceptable but Needing Small Revision:** No stakeholders volunteered concerns or complaints about parking requirements in zoning codes. Pricing is the dominant issue. As well, requirement revisions are slated for study and possible revision outside the Smart Growth case study. Two possible changes include applying core requirements (e.g. 1/3 residential in downtown mixed use) to some areas outside the downtown core and getting uniformity in residential requirements between mixed and non-mixed use developments within the core.

RECOMMENDED SMART GROWTH PARKING STRATEGIES

Based on the City's goals and stated actions in adopted policy documents as well as findings on parking demand/supply and stakeholder positions, there are further potentially feasible and acceptable actions worth considering. The following are suggested for further discussions:

Non-motorized Connectivity
The City of Berkeley highlights the importance of fostering connectivity between the downtown BART Station and other areas in its General Plan and Downtown Plan. The City should reinforce their existing policies and programs to enhance non-motorized connectivity within the downtown, especially in light of interest in use of parking pricing to balance supply and demand, encourage use of alternative modes and discourage long-term parking at street meters intended for business customers. As the stakeholder interviews show, the feasibility of an on-street price revision may hinge in part on new support for transit and TDM options for employees. As such, federal funding for these enhancements through MTC's Transportation for Livable Communities (TLC) grant program should be considered as one example of many of funding sources available for these types of programs. Enhancements include but are not limited to:

- Bike lanes and bicycle parking amenities.
- Pedestrian amenities such as: wider sidewalks, pedestrian scaled lighting, seating, street trees, enhanced crosswalks
- Connections to local and regional bike paths/trails

Additionally, the FHWA Value Pricing program not only supports parking pricing innovations but packages of transit and TDM improvements to maximize effectiveness and acceptance of pricing. A recent TDM study for the City enumerates many TDM options, but priority should be given to those most easily implemented and of most interest to employers and employees in light of recommended new parking pricing policies. Discounted transit passes may be of interest in this regard.

Transportation Demand Management (TDM)
TDM strategies are designed to address traffic congestion by reducing travel demand and focus on travel alternatives such as increased transit usage, walking, and bicycling to help achieve this goal. The Berkeley Downtown Business Association can adopt a TDM

program by pooling various small businesses together to offer commute trip benefits to their employees such as transit passes, car-sharing memberships, paid carpool parking spaces in off-street facilities, and effectively reduce the demand for single occupancy vehicle travel. One way to support these alternatives as well as street improvements, cleaning, lighting and security is through a fund financed in part from the increment of new revenues from revised on-street pricing and managed by a City in consultation with an advisory business committee. Other possible sources of funding suggested by the Transportation Commission for consideration include increased parking tax and transportation fees.

Adjustment to Parking Enforcement Times

The mix of commercial and major institutions such as UC Berkeley, the Berkeley Repertory Theater and School of Theatre, the Aurora Theater Company, and several movie theaters make the downtown a heavily visited and patronized area. The synergy between the theaters, restaurants, and events held in this area result in a significant number of visitors until late evening. As such, parking enforcement times should be adjusted to reflect the demand for parking generated by these uses during the later evening hours. Notably, operational times are recommended to be extended from their current operational period (9:00 AM to 6:00 PM) to 9:00 AM to 10:00 PM.

Additionally, if a revised on-street pricing program is adopted, enforcement should be increased to guard against meter feeding beyond time limits (consistent with T-34H), unless time limits are removed under escalating rates easily programmed at pay display machines. Shattuck Avenue would be the logical first step test area for this approach. Again, FHWA can support enhanced enforcement under its Value Pricing program during a demonstration period.

Parking District

Parking Districts are areas where the fees from on-street parking, development, or tax assessments are used to fund improvements to enhance parking conditions in a defined area, as referenced above for Old Pasadena. Such a district may be employed in a number of ways in downtown Berkeley, the following are some options:

- **Benefit** – The district could be instituted to provide benefits to the area where it is implemented. As such, revenue could be collected from on-street parking meters and used to provide benefits such as street sweeping, sidewalk cleaning, lighting enhancements, or security measures.

- **Assessment** – The district could also require new development to pay a fee in the form of taxes or in-lieu fees. Developers could be allowed to pay fees in lieu of providing the amount of required parking. The funds could then be used for district improvements, parking structure, etc.

A key component to successfully implementing a parking district includes community outreach and involvement. Often times when ignored this translates into community opposition and becomes a constraint on adoption and acceptance of innovative programs.

As such, key stakeholders should be included in the parking district planning process as they offer valuable insight into community concerns and help gauge receptivity.

Graduated On-Street Pricing

Parking occupancy data in the downtown indicates that a large percentage of streets in the downtown operate at or near full capacity during the midday and evening periods. As such, a graduated on-street pricing scheme should be top priority consideration for the City of Berkeley for several reasons. Not only are there consistent and multiple adopted policies supporting this action (e.g. T-34C, T-35C. T-35D), but this study has confirmed the high level of parking utilization and extended stay beyond time-limits observed throughout the day in the downtown and the same result is documented in another recent, more comprehensive study (Deakin et. Al) of street parking. Finally, there is a source of federal funding to support a test and careful evaluation of such a pricing strategy via the FHWA Value Pricing demonstration program which, while note essential to a test of graduated pricing, could enhance both implementation and evaluation.

Specifically, Berkeley would benefit from a test of graduated or progressive pricing on Shattuck Avenue as it is a heavily utilized main commercial street and has pay display meters easily programmed for progressive rates, accordingly to the meter manufacture. A progressive pricing test could be mounted at pay display machines there and evaluated for impacts, revenues, enforcement and acceptance. Based on the convenience of these spaces, they can be priced to encourage short-term use by customers through elevated hourly parking rates comparable to the progression of off-street rates. In addition, pay-and-display meteres programmed in a smiliar fashion can be added to the streets with highest demand just off Shattuck Avenue, thereby encouraging use of off-street facilities. Some fixed and/or lesser rate meters on surrounding streets might be considered where long term parking is acceptable. Further, selected neighborhood streets might be open to long term commuter parking on one street side by pay-and-display. In which case, in car hanging permits may be an alternate method of implementing this type of program if pay-and-display meteres are not attractive to residents. The overall goal is to provide maximum opportunity for long term parkers at core area meters to shift off street and to on street spaces away from competition with shoppers and business visitors.

The chief goal in setting new progressive pricing on Shattuck Avenue (and on any new pay-and-display machines added near Shattuck) is parity between on- and off-street rates. Specifically, pricing for beyond the first or second hour catering to shoppers should be comparable to rates for nearby off-street facilities to discourage meter feeding activity beyond time limits. The following illustrates current pricing (by hour) for off-street parking in the Center Street, Oxford, and the Golden Bear:

Table X-X
Off-Street Parking Facility Hourly Parking Rates

Facility	First Hour	Second Hour	Subsequent Hour
Center Street	$1.00-$1.50	$1.50-$3.00	$6.00 (3 hours); $10.00 (4 hours); $15.00 (4+ hours)
Oxford	$1.00	$3.00	$6.00 (3 hours); $10.00 (4 hours); $15.00 (4+ hours)
Private			
Allston Way	$2.50	$2.50	$2.50
The Promenade	$3.00	$3.00	$3.00
Golden Bear	$3.00	$3.00	$3.00

Source:

Based on a review and comparison of off-street hourly pricing for parking in downtown, the City of Berkeley's on-street parking should be priced at no less than $0.75 to $1.00 per hour; at least $1.50 to $3.00 for two hours (to balance shopper needs against feeding disincentive), then follow at least Center and Oxford off-street rates for the remaining hours without limit or with new two to three hour limits. Currently, on-street meters are $0.75 per hour. Revised time limits will ease the difficult enforcement burden of frequently chalking and checking tires to enforce current short term time limits.

An important consideration in setting new rates to discourage meter feeding is to what extent off-street capacity exists to absorb a shift of on-street parkers. As previously noted, Center Street Garage may often have up to 100 space capacity to absorb parkers shifting there. With about 260 pay display meters downtown, Center alone could absorb a considerable proportion of possible feeders at these machines. Consequently, good potential exists for a robust test of how progressive pricing might reduce meter feeding at pay display areas. Of course, the objective of progressive pricing is not merely to shift parkers off street but to alternatives to SOV driving, all of which could be tracked by careful evaluation.

Another consideration in setting the new rates is what other nearby jurisdictions charge on-street and how off-street and recommended on-street progressive rates compared to BART fares. Recommended on-street progressive rates are not markedly different from those at major, nearby city centers. San Francisco rates are $2.50 to $3.00 per hour downtown while Oakland is $1.25 per hour. As such, the suggested rates are competitive

with these jurisdictions. Additionally, average weekday roundtrip BART fares at East Bay stations range from $5 to $7[9]. Since these fares are less than recommended on-street rates and parking charges for long term parking off-street Berkeley, BART maintains an out of pocket cost advantage to parking long term in the city.

Parking Technology

The City of Berkeley's current use of pay and display machines within its downtown is one example of how parking technology can be used to implement progressive or graduated parking fees by increasing the fee rate per minute as the duration of the parking increases to discourage long term parking in the commercial areas. Revenues for time period changes and rate increases could be used to pay for the new equipment.

Aside from added and reprogrammed pay and display meters discussed above, other technologies that could be used to improve the parking experience of patrons are worth considering. One is the the use of use of stall sensors (4X4 inch stick pads with chips constantly messaging a central computer) to pinpoint overstays, track use and turnover and alert enforcers to problem areas. Sensors may be cost effective for evaluating demand, turnover and violations before and after revised on street meter rates. Sensors offer the potential to reduce intensive labor survey costs important to an ongoing evaluation. Several start up companies (Spark, Carma, Steetline and Sense) make these sensors and they are being tested with BART and Port of San Francisco. Because sensors are not inexpensive, (Streetline quotes cost as $300 per stall and $10 per month for installation, management and regular evaluation reports. See "Parking. Street Smarts," Urban Land, June 2006), the preferred approach is small scale testing initially and careful comparisons with usual manual survey costs and before and after violation rates. The FHWA VP program can support deployment of this technology as a means of evaluating pricing impacts (the program will support other means as well including parker, shopper, business, resident and commuter surveys).

Parking wayfare signs are another technology already being pursed by the City and important to implement as still another option for long term on street parkers to find and use off street spaces. The City should keep abreast of such systems in Sacramento, Oklahoma City and St. Paul for latest developments, costs and reliability. A recent survey suggests costs capital costs ranging from $400K to $950K (See "Characteristics of Recent Wayfinding Projects in the U.S.," Urban Transportation Monitor, May 26, 2006).

Finally, the use of GPS technology is worth exploring. It is now possible for enforcement vehicles to be equipted with GPS enabled cameras which can then scan license plates to better enforce time limits against meter feeding. The cities of Monterey, Chicago and Sacramento are current examples where these smart cameras are being employed ("Parking Meters Get Smarter," SFC, September 5, 2006). Palo Alto employs a handheld rather than minicart version of the device. The benefits of this technology

[9] Wilson, Richard. "Replacement Parking for Joint Development" (April, 2005).

include avoiding the need for chalking and the problem of parkers removing chalk to escape citations.

Off-Street Parking

While a survey of the off-street parking facilities in the downtown area is outside the scope of this study, stakeholder interviews show the importance of considering on-street parking policies in conjunction with off-street parking practices and supply plans. As previously discussed, it is unlikely that on-street pricing changes will be feasible without attention to several off-street issues.

In general, while City revenue data is collected long term, current, reliable, consistent use data is not so easily forthcoming (for example, Center Street Garage data does not include monthlies after mid 2005). Good tracking of off street use is essential to assessing impacts of any on-street pricing changes. The City should continuously compile off-street use data and generate accurate, regular, and easily accessible monthly or quarterly spreadsheets summarizing the same. Should the City pursue the FHWA Value Pricing demonstration, regular surveys of public and private off-street (and neighborhood) use will be required and supported.

Furthermore, due to stakeholder perceptions regarding the uncertain nature of ongoing gains and losses of parking supply downtown from development, relocations, and city facility revamps, the City should continuously estimate and update projected supply figures to the best of its ability. Also, existing off-street facilities should be periodically assessed at least every two to three years to document duration and turnover.

Finally, the planned revamp of Center street garage should pay heed to possible circulation improvements, paint and lighting to improve atmosphere for parking. Preliminary recommendations from the Downtown Area Plan process also make this point (DAP memo, August 30, 2006, Bob Wrenn et. al.).

Residential Permit Program

While complaints about existing RPP programs apparently are not voluminous, new policies need to be considered for RPP zones closest to downtown under any on-street pricing changes as some residents see spillover potential from proposed on-street meter pricing. As previously mentioned above, selected neighborhood streets might be open to long term commuter parking on one street side. This approach will provide legitimate, enforceable options for some long term parkers and provide options also for any current abusers of RPP regulations. On board hang tag permits might be useful for this purpose if residents prefer them to pay display machines. There are a number of innovative on-board hang tag meters available which click down off prepaid time and are easily enforced. As with core businesses, acceptability of neighborhood pricing in restricted stalls may be enhanced by guarantees for revenues returning to local improvements.

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[10] "Mi-Park Payment Solutions," Urban Transportation Monitor, May 26, 2006